20021222.ba v03_n427.bam.20021222

>From ???@??? Sun Dec 22 03:17:15 2002 -0600
Message-Id: <200212220917.gBM9H6Gc004684@sco.theporch.com>
Date: Sun, 22 Dec 2002 03:16:32 CST
From: Old Tube Radios <boatanchors@theporch.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: BOATANCHORS digest 3427

BOATANCHORS Digest 3427

Topics covered in this issue include:

```
     by "Hue Miller" <kargo_cult@msn.com>

------------------------------------------------------------------------
Message-ID: <008301c2a6fd$213bd060$e66ddbd0@rjmattson>
From: "R.J. Mattson" <rjmattson@hvi.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Trade my three XR-5 for one XR-6 Coil form.
Date: Wed, 18 Dec 2002 19:36:48 -0500
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

I have three National (5 pin) XR-5 coil forms and would like to trade for
one (6 pin) XR-6 coil form for SW-3.
Bob...W2AMI
http://www.qrz.com/callsign/w2ami

------------------------------
Message-ID: <002d01c2a70c$2e801fb0$c200a8c0@STUDY>
From: "Joe Watson" <wwatson5@cox.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Need SP-600 Big Knobs and One Handle
Date: Wed, 18 Dec 2002 21:10:27 -0600
MIME-Version: 1.0
Content-Type: multipart/alternative;
     boundary="----=_NextPart_000_002A_01C2A6D9.E370CDD0"

This is a multi-part message in MIME format.

------=_NextPart_000_002A_01C2A6D9.E370CDD0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: quoted-printable

I need the two big knobs (tuning and bandswitch) for a Hammarlund SP-600 =
I am restoring. =20

Also need one handle or a pair of handles.

Can anyone help?

Joe
W5WBR

------=_NextPart_000_002A_01C2A6D9.E370CDD0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
```

------=_NextPart_000_002A_01C2A6D9.E370CDD0--

Message-ID: <3E013A72.E11C7D22@Aschen.com>
Date: Wed, 18 Dec 2002 21:18:10 -0600
From: Tom Aschenbrenner <boat@Aschen.com>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: WWII SJ-1 Submarine Radar
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Hello All,

I am near completion of the restoration of the mid 1943 SJ-1
submarine radar which is located aboard the USS COBIA.
This submarine is docked in the harbor adjacent to the
Wisconsin Maritime Museum.

The radar is now a completely working example of one of the first
S-Band radars built for submarine use with the 706 magnetron
which is a clone of the device given to the US by the UK and
integrated into systems by physicists at the MIT RadLab.

The SJ-1 is a 50KW unit equipped with both a PPI and A-scope
indicator. This 1943 radar yields fine views of the harbor
and other targets on Lake Michigan.

I am trying to contact others that have done radar restoration.
I wonder if any of you might know of any other working WWII
radars and where they might be?

Regards,

    Tom Aschenbrenner

PS: The SCR584 at the Historical Electronics Museum is NOT working

    per the Director of the Museum...So, are there others?

Date: Thu, 19 Dec 2002 00:12:58 -0500 (EST)
From: William Donzelli <aw288@osfn.org>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: WWII SJ-1 Submarine Radar
Message-ID: <Pine.SUN.3.91-FP.1021218235914.29785B-100000@osfn.org>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

> I am trying to contact others that have done radar restoration.
> I wonder if any of you might know of any other working WWII
> radars and where they might be?

According to some, one of the Mk 34s on BB59 was fired up several years ago, but I really can not say if it worked or not. I certainly would not fire it up now, unless a complete overhaul is done.

There is a fellow in Chicago that has a complete AN/APS-4. He was working on getting the thing going, but I do not know how far he got.

> PS: The SCR584 at the Historical Electronics Museum is NOT working
>   per the Director of the Museum...So, are there others?

I take delivery of one in the spring. I hear the Radio Research has one left, but it is missing the antenna and pedestal (apparently a common thing to grab off a '584).

William donzelli
aw288@osfn.org

Message-ID: <006401c2a722$db68cb80$8e5462d8@naxs.com>
From: "Barry L. Ornitz" <ornitz@tricon.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: lamp question
Date: Thu, 19 Dec 2002 00:52:40 -0500
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Morris Odell, VK3DOC, asked:

> Does anyone know which halogen and how much of it there is
> in a halogen lamp?

>
> 73, Morris

Typically bromine, but iodine was the first used. The halogen
reacts with the sputtered tungsten metal on the quartz
envelope to produce a metal halide gas. When the gas hits the
super hot filament (3400K and above), it decomposes and leaves
the tungsten behind on the filament. This regeneration cycle
greatly extends the life of the filament. Fluorine would
react with the quartz, and it is reactive enough too to also
attack the cooler portions of the filament. However,
manufacturers are still experimenting with fluorine fillings
as so little (a few hundred PPM) would be needed in the bulb.
I believe chlorine presents similar problems. In the early
iodine filled lamps, there was considerable absorption by the
iodine in its resonance bands.

I believe the inner capsule is pressurized, but I do not know
the actual amount of halogen used.

To add a little more Boatanchor content here, the operating
life of conventional incandescent lamps is inversely
proportional to voltage to the 12th power. A six percent drop
in lamp voltage will typically double its life. But because
of the lower temperatures used with tube filaments, the same
rule does not apply, but excess filament voltage will still
shorten a tube's life.

        73, Barry   WA4VZQ   ornitz@tricon.net

Message-ID: <0ce501c2a79a$94ed0a40$3201a8c0@w8ut>
From: "Al Parker" <anchor@ec.rr.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: FS: Test Eqpt - scopes, etc.
Date: Thu, 19 Dec 2002 15:09:48 -0500

all items are working, unless noted. See link below for more info:
1. Tektronix 453 50mc dual trace scope $75
     I will sell either item #1 or item #2, not both, I still need one.
     buy this one with item #4, the non-working one, for $115 and I will
include an original manual.
2. Tektronix T932A 35mhz dual trace scope $95
     I will sell either item #1 or item #2, not both, I still need one.
3. G-W model GAG-808A, 10hz - 1mhz signal generator $35
4. Tek 453 50mc dual trace scope $40 (not working)
    buy this one with item #1, the working 453, for $115 and I will include
an original manual.

5. Heathkit model O-8 5" scope $25
6. SG-12/U Signal Generator, 20-108mc AM/FM $35
7. Freed mod. 1620 megohmeter $50
8. Bird 50w, 50 ohm, Dummy Load $20
all prices do not include shipping from 28560

see:
http://www.thecompendium.net/radio/testeqpt.htm
for pix and info on all of these, email direct with any more questions

73,
Al, W8UT
New Bern, NC 28560
BoatAnchors appreciated here
http://www.thecompendium.net/radio/
http://www.hammarlund.info

Message-ID: <003001c2a82f$48dda610$c200a8c0@STUDY>
From: "Joe Watson" <wwatson5@cox.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Looking for some SP-600 parts
Date: Fri, 20 Dec 2002 07:54:15 -0600
MIME-Version: 1.0
Content-Type: multipart/alternative;
     boundary="----=_NextPart_000_002D_01C2A7FC.FDF22FE0"

This is a multi-part message in MIME format.

------=_NextPart_000_002D_01C2A7FC.FDF22FE0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: quoted-printable

I am looking for the two big knobs for a Hammarlund SP-600 and for a =
handle (or set of handles).

Any help on locating these would be much appreciated.

Thanks.

Joe
W5WBR

------=_NextPart_000_002D_01C2A7FC.FDF22FE0
Content-Type: text/plain; charset=us-ascii

Content-Transfer-Encoding: 7bit

* *
*   ---REMAINDER OF MESSAGE TRUNCATED---   *
*   This post contains a forbidden message format   *
* (such as an attached file, a v-card, HTML formatting)   *
*   Mail Lists at theporch.com only accept PLAIN TEXT   *
* If your postings display this message your mail program   *
* is not set to send PLAIN TEXT ONLY and needs adjusting   *
* *

------=_NextPart_000_002D_01C2A7FC.FDF22FE0--

To: Old Tube Radios <boatanchors@theporch.com>
Date: Fri, 20 Dec 2002 11:00:22 -0600
Subject: CHOKE BIG FS
Message-ID: <20021220.110023.2776.3.jackiv@juno.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
From: jackiv@juno.com

I have a power supply choke fs. a Thordarson no.T48004.
 (vendor p/n?)
  4 hy, 550 ma, 25 ohm resistance.
In potted case wt 16 lbs. $20.00 plus
shipping from 60067.
73   jack
contact direct   jackiv@juno.com

From: WA5CAB@cs.com
Message-ID: <8d.217e5a2c.2b34e1b1@cs.com>
Date: Fri, 20 Dec 2002 16:12:17 EST
Subject: FS: ME-6D/U Electronic Multimeter
To: Old Tube Radios <boatanchors@theporch.com>
MIME-Version: 1.0
Content-Type: multipart/alternative;
boundary="part1_8d.217e5a2c.2b34e1b1_boundary"

--part1_8d.217e5a2c.2b34e1b1_boundary
Content-Type: text/plain; charset="US-ASCII"
Content-Transfer-Encoding: 7bit

Group,

ME-6D/U Electronic Multimeter, .005 to 500 VAC RMS and -65 to +57 DBM, 15 HZ-250 KHZ. Also functions as AC amplifier with gain of up to 4500. With NAVSHIPS 92423 manual but no leads (didn't originally come with any), $40.00 plus shipping. Condition is checked/working but not recently calibrated. If interested, please reply direct, not to the list.

73
Robert Downs
Houston
<WA5CAB@cs.com>

--part1_8d.217e5a2c.2b34e1b1_boundary
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

* *
*   ---REMAINDER OF MESSAGE TRUNCATED---   *
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* is not set to send PLAIN TEXT ONLY and needs adjusting *
* *

--part1_8d.217e5a2c.2b34e1b1_boundary--

Message-ID: <004b01c2a88e$5f7dd660$6601a8c0@charter.net>
From: "Tony Grogan" <wsno19@mindspring.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: AN/PRC-70
Date: Fri, 20 Dec 2002 20:14:55 -0500
MIME-Version: 1.0
Content-Type: multipart/alternative;
     boundary="----=_NextPart_000_0048_01C2A864.76431920"

This is a multi-part message in MIME format.

------=_NextPart_000_0048_01C2A864.76431920
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: quoted-printable

Wanted...the worst beat up example of this radio that is possible to =
find? No accessories required. Does not have to work!!!! Must be =
complete internally but does not have to be capable of repair!!! To be =
used for display only. Thanks..Tony Grogan.

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.423 / Virus Database: 238 - Release Date: 11/25/02

------=_NextPart_000_0048_01C2A864.76431920
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

* *
*   ---REMAINDER OF MESSAGE TRUNCATED---   *
*   This post contains a forbidden message format   *
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* is not set to send PLAIN TEXT ONLY and needs adjusting *
* *

------=_NextPart_000_0048_01C2A864.76431920--

Message-ID: <001301c2a919$dd68baa0$6501a8c0@scr274n>
From: "Jack Antonio" <scr-287@sbcglobal.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: more 6H6 stuff
Date: Sat, 21 Dec 2002 09:53:26 -0800
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

I had a little time today to play with the 6H6 oscillator/amplifier project and
here is what I came up with.....

Last week, I wound up with a voltage gain of about 8, using a 1 Meg plate
resistor, this
week I tried a 10 meg resistor, and had a voltage gain of about 15.. Plate current
still
did not change much from 4 uA. (yes that is microamps, not milliamps)

I put the 1 meg back in, and then loaded the output with a 1 meg load
resistor(simulating
the grid resistor of a following stage) through a .033 cap. As expected the
output voltage
dropped by half.

Next experiment was to try the metal version of the 6H6(up to now I had used the glass version). Voltage gain increased to about 16, with a jump in plate current to
26 uA. This with a 1Meg plate and 100k grid resistor. Distortion looked unchanged.

Nest was to try and build a simple little oscillator. I used a universal broadcast oscillator coil, but here I met with total failure. I used a Hartley circuit but could
not get any sign of oscillation with either the metal or glass tube. I want to try another circuit configuration, but have run out of time for today.

73

Jack Antonio WA7DIA
scr-287@sbcglobal.net

Message-ID: <3E04D022.5257B1D0@bw.webex.net>
Date: Sat, 21 Dec 2002 15:33:38 -0500
From: Al Klase <skywaves@bw.webex.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Last Minute Christmas Present
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

My apologies for the off-topic post, but you guys have the right tendencies.

You might want to check out the Wild Planet Radio DJ. This miracle of Chinese slave labor is a miniture broadcast console containing a crystal-controlled part-15-approved AM transmitter, microphone, cassette player, and sound effects generator. There's separate gain controls for the mic and tape/line input and even an "ON AIR" light. Works well. Best part is they're ten bucks at Toys Are Us.

There's eleven pages of tech info and hacking suggestions at: http://home.att.net/~weatheradio/wprdj.htm

Pix at: http://shop.store.yahoo.com/farmgoods/radiodj.html

Merry Christmas
Al
--
Al Klase - N3FRQ

skywaves@bw.webex.net
Flemington, NJ 08822
Web Page: http://www.webex.net/~skywaves/home.htm

Message-Id: <3.0.3.32.20021221190804.024a95e8@pop-server.nc.rr.com>
Date: Sat, 21 Dec 2002 19:08:04 -0500
To: Old Tube Radios <boatanchors@theporch.com>
From: john <johnmb@nc.rr.com>
Subject: I'm dreaming of a blue regen...
Mime-Version: 1.0
Content-Type: multipart/mixed; x-avg-checked=avg-ok-6ECB1266;
boundary="=======4A327593======="

--=======4A327593=======
Content-Type: text/plain; x-avg-checked=avg-ok-6ECB1266; charset=us-ascii
Content-Transfer-Encoding: 8bit

I'd like to make a two tube regen, using Arcturus blue tubes. I saw a rig such as this at the NC AWA Spring meet a couple years ago and it was beautiful.

My question is, what suitable tubes did Arcturus make in the blue glass?
I know of 24 and 27 ...others?

I have squirreled some square buss wire away, plus some period hardware to pull this off. On a stained breadboard with a bakelite front panel, it should look great (as did the one I saw in Charlotte).

Hope to hear your blue suggestions...

73
John wb5oau

--=======4A327593=======
Content-Type: text/plain; charset=us-ascii; x-avg=cert; x-avg-checked=avg-ok-6ECB1266
Content-Disposition: inline

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.431 / Virus Database: 242 - Release Date: 12/17/02

--=======4A327593=======--

Message-ID: <00fb01c2a961$f506f170$fb396f0a@pavillion>

From: "Robert Nickels" <w9ran@ONERADIO.NET>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Neuter'ing
Date: Sat, 21 Dec 2002 20:27:57 -0600
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

I for one seem to struggle with neutralization...

Case in point is a TR-3, the finals test good but I either get zilch output or the plate meter pegs. The book just says to tune up on 10 meters and then adjust the neut capacitor until max output and plate dip occur at the same point on the plate tuning adjustment. Doesn't help much when the output goes wild anytime drive is applied.

I remember methods involving GDOs or removing screen voltage - but would appreciate a chance to learn a "best practice" techique that could be used on any rig.

Thanks and 73,
Bob W9RAN

To: Old Tube Radios <boatanchors@theporch.com>
Cc: boatanchors@theporch.com
Date: Sat, 21 Dec 2002 23:57:30 -0500
Subject: Re: Neuter'ing
Message-ID: <20021221.235731.800.1.k4pf@juno.com>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
From: Edward Knobloch <k4pf@juno.com>

"Robert Nickels" <w9ran@ONERADIO.NET> writes:
> I for one seem to struggle with neutralization...
>   <snip>
>would appreciate a chance to learn a "best practice" techique that could

> be used on any rig.
>
The "standard" method is to remove screen voltage (only) to the finals and apply normal drive with the tune and load caps in their normal position,

highest freq band, 50 Ohm dummy load. Loosely couple a receiver
or other rf detector to the dummy load and adjust the neutralization
capacitor for minimum output.

Having once zapped myself with 800V while doing the "standard" method,
I now prefer the "unstandard" method:

Leave all the voltage off the transmitter. Unplug it, if you are wise.
Parallel a small resistor equal to the plate resistance from the final
plates to ground.
E.g., for a rig that runs 800V at 250mA at resonance, I substitute a 3.3K
1/4W resistor
(tubes are still in their sockets).
Place an RX noise bridge set to 50 Ohms R and zero jX,
connected to the output coax of the rig (no dummy load). Adjust the tune
and load caps
(highest band) for a null on the RX noise bridge. This means the tune
and load caps
are set correctly to match the normal tube impedance to 50 Ohms output.
Remove the RX noise bridge

Now, couple a sensitive rf detector to the grid of the final stage. (A
divide-by-ten
scope probe connected to a receiver input works fine.)
Connect a signal generator to the output connector of the transmitter,
set to a frequency on the highest band of the transmitter.
Without touching the tune and load capacitors, adjust the neutralizing
capacitor
for a null on the grid rf detector. Mission accomplished.
(Don't forget to remove the small plate resistor.)

73,
Ed   k4pf@juno.com

From: W4UOC@aol.com
Message-ID: <105.22d2277c.2b36a090@aol.com>
Date: Sat, 21 Dec 2002 23:58:56 EST
Subject: 10 mtr Black Widow Transeiver
To: Old Tube Radios <boatanchors@theporch.com>
MIME-Version: 1.0
Content-Type: multipart/alternative;
boundary="part1_105.22d2277c.2b36a090_boundary"

--part1_105.22d2277c.2b36a090_boundary
Content-Type: text/plain; charset="US-ASCII"
Content-Transfer-Encoding: 7bit

I am attempting to bring back to life a 10 meter Black Widow Transeiver.
I have good output on the transmitter section and some audio and RF detection
on the receiver section but unfortunately it is not receiving on the 10 meter
segment. Guess someone has tweeked the rf and if stages.

Does anyone have a manual that may show the alignment set up for this
receiver?

It appears to have a 11.5mhz and 1.5mhz first and second IFs.

Tom Koch - W4UOC
 <A HREF="http://members.aol.com/w4uoc/index.html">W4UOC's Home Page</A>

--part1_105.22d2277c.2b36a090_boundary
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

* *
*   ---REMAINDER OF MESSAGE TRUNCATED---   *
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* *

--part1_105.22d2277c.2b36a090_boundary--

Message-ID: <001901c2a97d$44826e80$ca5362d8@naxs.com>
From: "Barry L. Ornitz" <ornitz@tricon.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Neutralization
Date: Sun, 22 Dec 2002 00:44:55 -0500
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Bob Nickels, W9RAN, wrote about his troubles neutralizing a
Drake TR-3:

> Case in point is a TR-3, the finals test good but I either
> get zilch output or the plate meter pegs. The book just
> says to tune up on 10 meters and then adjust the neut
> capacitor until max output and plate dip occur at the

> same point on the plate tuning adjustment. Doesn't help
> much when the output goes wild anytime drive is applied.

> I remember methods involving GDOs or removing screen voltage
> - but would appreciate a chance to learn a "best practice"
> technique that could be used on any rig.

A similar question came up recently on the Drake reflector.
My response is listed below:

> Bill Campbell, WD4HEN, asked about the final output tube's
> neutralization procedure, noting that he was unable to get
> the factory procedure to work.

> Bill Abate, K3PGB, gave an excellent suggestion and noted
> that with some tubes, it was impossible to obtain proper
> neutralization.

>> I found it was easier to adjust the neutralization cap for
>> minimum RF feed through (no plate or screen voltage) as a
>> first step to get it in the ballpark. I then followed the
>> book procedure for max output and dip in plate current
>> occurring at the same point. Also, some finals cannot
>> be neutralized properly and have to be replaced.

> Something that some people tend to forget is that you have
> to start with matched tubes.

> With the sources of these tubes drying up, matched tubes are
> getting even more difficult to find. Matched pairs are
> difficult enough for the T-4X transmitters, but getting
> three matched tubes for the TR-3 and TR-4 is even more
> difficult.

> Also a limited number of sweep tubes were made with an
> exceptionally long internal cathode lead. They worked fine
> for television sweep service, but they could not be used
> much above 40 meters in transmitters. You can often spot
> these tubes with a quick visual inspection, _IF_ the
> metallic getter does not block your view which it often
> does.

> Having had my T-4X since 1965, I have been through a number
> of tubes. I never had problems with RCA, Sylvania, Zenith
> and GE tubes. I think I once even used some International
> tubes from Japan. But I always used pairs of the same
> brand, and these were matched for equal transconductance in
> a Hickok 539 tube tester. Neutralization settings might be

> quite different from one manufacturer to the next, but I
> never failed to neutralize them. Mixed tubes, i.e. those
> from two different manufacturers, may or may not neutralize
> properly - even if their transconductance is matched.
> [There are usually interelectrode capacitance variations
> between manufacturers.]

> Another trick to try is to neutralize the tubes on a lower
> band such as 20 meters. This will often get you in the
> "ballpark" quickly. Then move up to 10 meters where only a
> slight additional adjustment may be needed.

Since the Old Tube Radios list has, in my opinion, the most technically astute readers, let me add some additional techniques.

One traditional method that worked in Class C stages (but not in the AB1 output of the Drake) was to monitor the grid current of the final amplifier. Here you keep the plate voltage on, but remove the screen voltage and ground the screen grids. If the stage was properly neutralized, tuning the output tuning through its range would produce no (or a very minimal) change in the grid current. With an AB1 output, there is no grid current, so naturally this method must be modified.

Here is where the dipper comes in. Couple the GDO lightly to the tuned input of the final, then go through the procedure above tuning the output through its range. There should be no change in the dipper current if the tube is neutralized properly. Again plate voltage should be applied with the screens grounded during this procedure. No RF drive should be applied. Please remember that you are working around high voltage so be extremely careful when making adjustments or placing the GDO coil in position.

The method K3PGB described above is more sensitive. Here you remove both the screen and plate voltage. The screen grids should be grounded. The plate supply circuit should also be grounded, but on the "cold" end of the plate RF choke. A sensitive RF indicator should be coupled to the rig's output. This can be a simple diode detector coupled to a microammeter, a VTVM with a good RF probe, or a fancy HP power meter like the 431. The neutralizing network is adjusted for minimum indication of RF output with drive applied to the final.

Essentially what is happening is that there is RF coupled from the grid to the plate circuit through the tube's grid-to-plate

capacitance. Neutralization circuits supply similar coupling from the grid to the plate but with a 180 degree phase difference. When adjusted properly, the two signals cancel. This coupling also works both ways, so when proper neutralization is achieved, changes in the plate tuning are not coupled back to the grid.

Once the neutralization circuits are adjusted, reconnect the plate and screen circuits. Then follow the Drake procedure. This is to tune the output tank carefully for a plate current dip, then to tune away from the dip slightly while watching the RF output level. If the RF output increases slightly on either side of the plate current dip, the neutralization should be adjusted slightly. In a properly neutralized final, plate (and screen) current minimum [and grid current maximum, in the case of Class C] occur simultaneously with maximum RF output. The final should be operating into a good resistive load under full power for this test.

Before closing, let me again reiterate the need for safety here. The voltages in a tube final are almost always lethal and unforgiving. Don't take chances.

        73, Barry L. Ornitz   WA4VZQ   ornitz@tricon.net

From: "Hue Miller" <kargo_cult@msn.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Last Minute Christmas Present
Date: Sun, 22 Dec 2002 01:13:41 -0800
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
Message-ID: <OE17ltra4wkLUW5RmrG0000922d@hotmail.com>

----- Original Message -----
From: "Al Klase" <skywaves@bw.webex.net>
> You might want to check out the Wild Planet Radio DJ. This
> miracle of Chinese slave labor is a miniture broadcast
> console containing a crystal-controlled part-15-approved AM
> transmitter, microphone, cassette player, and sound effects
> generator.

It's kind of fun to see that this $10 broadcast xmtr has an actual pi-output circuit and an RF output indicator and antenna and ground leads. Almost like

a real one, almost.
My computer has 2 speakers. One is without the
built in p/s, it only does speaker work. I unplugged
the audio cord from the back of this speaker and
plugged it right into the CD socket on the RADIO DJ.
Now the computer is tuned in to KEXP (FM 90.3)
in Seattle, and my SX-62B is hearing Afro Pop
music on 1610 kcs. Yes, i could wire the audio line
from my computer right into the audio input of the
SX-62, but #1 this is easier, no cross domicile wiring
to trip over #2 radio is more fun and #3 with a transmit
power of 1.5 mw or less, the SX-62 is still dx'ing a
weak one. Worth the $10, this toy.
Hue Miller

End of BOATANCHORS Digest 3427
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